

Response to Office Action Mailed July 16, 2004
Application No. 10/078,449
Attorney Docket No. 2089/42100 Case PA3 TMM

Remarks/Arguments

The present application has been amended in response to the Examiner's July 16, 2004 Office Action.

Amendments to the Specification:

The specification was amended solely to change the title of the invention and to correct typographical errors in the identification of prior art patents. No new matter has been introduced. Please note that the patents misidentified were correctly cited in the Applicant's Information Disclosure Statement.

Amendments to the Claims:**Section 102 Rejection**

The Office rejected claims 1 through 11, 13, 18, 19, and 21 through 31 as anticipated by Kondo, United States Patent No. 5,528,773. Applicant has amended claims 1, 9, 18 through 24, 30, and 31, and respectfully requests reconsideration of this rejection.

Kondo describes an optical disk having two components to provide cipher key information. He teaches the application of bar codes on the disk edge, in order to provide a cipher key: "Thus, the bar-codes 22 of the present application are formed in a serrated pattern along the peripheral edge surface. . . ." Column 4, lines 62-64. His objective is to provide a disk which cannot be properly reproduced, unless it has the required cipher key information. Accordingly, Kondo requires that data recorded on the disk surface of the optical disk be ciphered. See column 1, lines 52-54. Therefore, some of Kondo's surface data storage area is unavailable for data

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storage, being instead dedicated to cipher key information. This requirement subtracts from the useful data storage area of the disk. (The present invention does not share this limitation.) Secondly, Kondo inscribes bar codes to the edge of the disk, which contain the cipher key. (The present application is not so limited, as data on the disk edge can be read independently of the data on the surface of the disk.)

Accordingly, Kondo teaches application of read-only data. Kondo does not want the user to be able to read and write on the disk edge, as his purpose is to provide a cipher key. If a user could ascertain the cipher key and write it on the disc edge, the user would be able to circumvent Kondo's bar-code protection scheme, undermining the device. See, for example, Kondo at column 5, line 61 through column 6, line 3.

Although Kondo contemplates the use of his invention on optical disks, he teaches away from using optical disk technology on the disk edge. Data such as music and software are recorded on the data recording area 3 of Kondo's disk 2 (see Kondo's Figure 1 and column 2, lines 48-53.)

Notably, Kondo provides:

a "non-data recording area 4 defined in an area other than the data recording area 3 in the optical disc 2, i.e. areas where the optical head cannot scan. . . ."

Kondo at column 2, lines 53-55.

Kondo, rather than using the pits and bumps that create the ones and zeros of digital code, uses bar codes created by a mechanical pressing operation in the manufacture of the disks. Kondo

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forms a serrated pattern in the edge of the disc, creating 300 μ m ridges. An optical disc such as a computer disc, on the other hand, as is well known in the art, has no mechanical ridges, but has 125 nm pits covered by a smooth layer of polycarbonate. While Kondo describes an optical disc for the data, whether it be music or software, he does not teach corresponding reflective methods for the disk edge. Kondo's bar codes, whether implemented by mechanically pressing the disk during manufacture, by ink-jet printing, by burning with a laser beam, or by magnetic ink, and whether read by a capacitance sensor, a photo sensor, or a magnetic sensor, are as different from an optical disc as an optical disc is from an old-fashioned vinyl long-playing record.

Additionally, Kondo provides only for cipher key data on the disk edge, wherein the cipher key data is necessary to decipher the main data carried on the surface of the disk. He thus teaches away from having independently usable information on the disk edge.

Applicant, accordingly, has defined claims that distinguish Kondo. Applicant, by claiming an optical disk surface for the disk edge, has defined over Kondo, who specifically describes a non-recording area.

Additionally, Applicant has now specifically claimed the use of independent data on the disk edge. Kondo, of course, describes only the use of cipher key data on the disk edge and teaches away from the use of independent data.

Applicant also requests the reconsideration of the rejections of claim 9 and its progeny (claims 10 through 14), which claim an enlarged disk surface. Kondo does not illustrate or describe an

enlarged edge of the disk, not in his Figure 3 or elsewhere. Kondo does not illustrate or describe an angled annular surface, not in his Figure 3 or elsewhere.

Applicant also requests reconsideration of the rejections of claims 18 and 19. Kondo does not illustrate or describe the application of a material having a surface to store data. Kondo teaches that data may be imparted into an existing physical structure. He does not suggest creating a new physical surface and exploiting this. The concept of creating a data surface (a new physical structure) integrated into the edge of a disk is new. This differs significantly in scribing tiny notches with a laser.

Section 103 Rejection

The Office rejected claims 12, 14 through 17, and 20 under Section 103(a) as being unpatentable over Kondo. The Office admits that Kondo does not describe angled surfaces that define a generally triangular cross-section having an apex at the edge of the disk, nor an edge surface having at least two layers. The Office asserts that these features are "notoriously old and well known in the art." The Applicant traverses this rejection and requests reconsideration.

Angled Surfaces

It would not be obvious to a person of skill in the art to modify Kondo to provide angle surfaces. Kondo teaches the use of bar codes, as embodied by notches mechanically pressed in edge of the disk, or by bars printed on the edge of the disk. Providing an angled surface to Kondo's disk would not provide any benefit. Whether Kondo is detecting the bar codes with a capacitance sensor, a photo sensor, or a magnetic sensor, the use of an angled surface of any kind would not

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increase the detection capability of the sensor. A notch, whether angled or not, still must transmit light to the photo sensor and a ridge, whether angled or not, still must block light from the photo sensor. Placing angles in the notches and ridges would detract from this performance. A strip of ink on the disk edge, either regular ink or magnetic ink, is still read perpendicularly by a reader and the angle of the strip does not improve that performance. So Kondo teaches away from the use of any angle surface.

The present invention, as distinguished from Kondo, however, uses optical technology. An increase in the surface area that can be read by the optical head means an increase in the number of tracks of data, composed of ones and zeros, and therefore an increase in the amount of data that can be read by the optical head. Accordingly, a novel feature of the present invention is to provide an angled surface that increases the surface area of the edge of the disk and increases the amount of data that can be read on the edge of the disk. This feature is not described in the prior art.

Nor could this feature be described in the prior art. The only reference cited by the Office against the Applicant's main embodiment of optically encoding data on the disk edge was Kondo, and Kondo manifestly does not describe an angled disk edge surface. Had some other reference described encoding data on an angled disk edge surface, that other reference would have been more relevant than Kondo and would have been cited by the Office. Applicant is not aware of any such reference.

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Official notice can only be taken when the facts beyond the record are capable of such instant and unquestionable demonstration as to defy dispute. E.g., MPEP at § 2144.03. Applicant respectfully suggests that the technology of an optical disk is not appropriate for official notice in this case and requests reconsideration of this rejection of claims.

Multi-layer Surface

Applicant respectfully suggests that similar reasoning applies to the determination that it was obvious to provide Kondo's disk edge with two layers.

First of all, Kondo does not teach any embodiment for which layers would apply. Kondo's primary embodiment is notches and ridges mechanically pressed into the disk edge. The concept of layers simply does not apply here. Since there cannot be layers of notches and ridges, neither a capacitance sensor or a photo sensor could read the nonexistent layers.

Nor could layers apply to Kondo's other embodiments. If, for example, a skilled user would apply two layers of magnetic ink, the magnetic sensor would read both layers as one layer. Similarly, a photo sensor would perceive two layers of regular ink as one layer.

No prior art reference known to the Applicant teaches the use of optical technology on the disk edge; accordingly, no prior art reference known to the Applicant teaches the use of layers of optical technology on the disk edge. Kondo manifestly does not teach layers of optical technology on the disk edge. There cannot be a prior art reference that teaches layers of optical

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technology on the disk edge, because if such a reference existed, it would be more relevant to the Section 102 rejections that Kondo and would have been cited by the Office.

Official notice can only be taken when the facts beyond the record are capable of such instant and unquestionable demonstration as to defy dispute. *E.g.*, MPEP at § 2144.03. Applicant respectfully suggests that the technology of an optical disk is not appropriate for official notice in this case and requests reconsideration of this rejection.

Monitoring

The Office rejected claims 16 and 17 under Section 103(a), but no explanation was given. These two claims apply to monitoring characteristics of the disk, such as tilt, vibration, or rotation speed. Kondo does not describe any such monitoring function. Accordingly, Applicant requests reconsideration of this rejection.

FROM TREXLER ETAL.

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It is expected that this Response places the present application in condition for allowance. Should the present claims not be deemed adequate to effectively define the patentable subject matter, the Examiner is respectfully urged to call the undersigned attorney of record to discuss the claims in an effort to reach an agreement toward allowance of the present application.

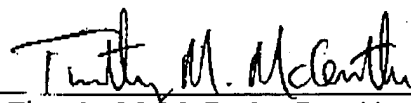
Respectfully submitted,

G6 Science Corp., Applicant

Date: __

9-13-04

By: _____



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